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ECE Coastal Cities Initiative: for resilient human settlements in coastal areas in the ECE Region

Note by the secretariat

Summary

To support the implementation of the Strategy for Sustainable Housing and Land Management in the ECE region for the period 2014-2020 (ECE/HBP/2012/3), the secretariat has elaborated this proposal for the preparation of a study on the classification of coastal areas and the development of policy advice and guidance for cities in the coastal areas in the ECE region.

The Working Party is invited to discuss and endorse this proposal.

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I. Background

1. According to the Strategy for Sustainable Housing and Land Management in the ECE Region 2014-2020[1] adopted by the ECE Ministerial Meeting on Housing and Land Management in October 2013, by the year 2020, member States *should develop territorial plans and/or other instruments to enforce planning regulations for areas in human settlements prone to natural and human generated disasters, attractive for private investments, ecologically sensitive and heritage sites.*

2. Cities and human settlements in coastal areas are the most affected by *natural and human generated disasters* while are also *attractive for private investments,* and often located *in ecologically sensitive areas.* Generally coasts are more densely populated compared to in-land areas due to the many key economic activities taking place in coastal areas, including marine transport, shipping of goods, fishing, recreation, tourism, offshore gas and oil drilling. Coastal areas are also home to species and habitats that provide many benefits to the society but might often be threatened. Coastal areas biomes are rich in biodiversity but at the same time extremely vulnerable.

3. Natural disasters and climate change affect the environment as well as human settlements in coastal areas in a variety of ways. Coasts are prone to sea level rise, storms and other severe weather events, which increasingly result in floods and coastal erosion. Estimates of future sea level rise vary for different regions, but global sea level for the next century is expected to rise at a greater rate than during the past fifty years.[2] This means that the challenges of the coastal zones erosion and inundation will become in the future even more acute.[3] In addition, rising atmospheric concentrations of carbon dioxide (CO2) are causing the oceans to absorb more of the gas and become more acidic. This rising acidity could have significant impacts on coastal and marine ecosystems.[4]

4. In the UNECE region, 31 of the 56 member States have sea coastlines. In the United States, 23 of the 25 most densely populated states are located along the coasts. Capital cities of Denmark, Norway, UK, are coastal cities. A list of UNECE member States with the information on the length of their sea coastlines and major cities in coastal areas is available in Annex 1 to this document.

5. The need for urgent action by governments to make human settlements more resilient to extreme weather events, including those caused by climate change, is underlined by the Geneva UN Charter on Sustainable Housing[5] and is part of the proposed UN Sustainable Development Goals.[6]

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[1] http://www.unece.org/fileadmin/DAM/hlm/documents/Publications/sust.hsng.strategy.pdf, p. 5

[2] Nicholls, R.J., at al. (2007). Coastal systems and low-lying areas. In: Climate Change 2007: Impacts, Adaptation, and Vulnerability. Cambridge University Press, Cambridge, United Kingdom

[3] Intergovernmental Panel on Climate Change (2012). Summary for Policymakers. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 1-19.

[4] Climate Change Science Program and the Subcommittee on Global Change Research (2009). Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region. US Environmental Protection Agency EPA, Washington, D.C., USA

[5] http://www.unece.org/index.php?id=37235&L=0

[6] http://sustainabledevelopment.un.org/focussdgs.html

II. Proposed objectives and activities of the study

6. The proposed study will support the implementation of the Strategy for Sustainable Housing and Land Management in the ECE Region and the Geneva UN Charter on Sustainable Housing by developing a classification system of coastal areas and providing guidance to the ECE member States for increasing resilience of cities and human settlements in coastal areas.

7. The proposed Coastal Cities Initiative for the ECE Region will include the following activities:

(a) Establishment of an expert group for the preparation of the study;

(b) Elaboration of a classification system for coastal areas;

(c) Development of a classification of coastal areas in the ECE region and preparation of the study report;

(d) Preparation of maps with the classification of coastal areas for the ECE region;

(e) Pilot activities for testing the classification system for at least 10 cities in the ECE region;

(f) Development of guidelines for ECE coastal cities including best practices;

(g) A series of capacity building activities, aimed at facilitating exchange of best practices and building capacities of national and local authorities for reducing vulnerabilities and increasing urban resilience of the coastal cities.

III. Proposed methodological approaches

8. It is proposed to use the Coastal Hazard Wheel (CHW) system developed for multi-hazard assessment of coastal areas (Rosendahl Appelquist 2012, 2014)[7] as a starting point for the development of the methodology of the classification of coastal cities and human settlements. This coastal classification system is based on the bio-geophysical components that are considered most important for the characteristics of coastal areas. The components included are geological layout, wave exposure, tidal range, flora/fauna, sediment balance and storm climate, and each generic coastal environment has a specific combination of these variables.

9. However, the mentioned methodology is not sufficient to develop policy advice to the cities and human settlements where the risks of exposure also depend on the economic and social potential of cities, existing planning and infrastructure. Therefore, in addition to the natural environment indicators as proposed in the methodology by Rosendahl Appelquist, indicators characterising risks to the built environment and infrastructure, economic and social development; shall be added to complete the methodology for the ECE Coastal Cities Initiative. These can be based on other relevant literature and initiatives, as well as work already undertaken in this area by ECE.

[7] Rosendahl Appelquist, L., Halsnæs, K. 2014. The Coastal Hazard Wheel system for coastal multi-hazard assessment and management in a changing climate. Submitted to *Journal of Coastal Conservation.* Rosendahl Appelquist, L. 2012. Generic framework for meso-scale assessment of climate change hazards in coastal environments, Journal of Coastal Conservation.

IV. Proposal for the organization of work on the policy brief

10. The proposed initiative is to be implemented through the establishment of an expert group, which will be open to the participation of partner organizations and experts. Among possible partner organizations to be invited to cooperate are: UN-Habitat, the United Nations Environment Programme, the United Nations Development Programme, the United Nations Office for Disaster Risk Reduction, the Organisation for Economic Co-Operation and Development, the European Commission, ICLEI Local Governments for Sustainability, United Cities and Local Governments – UCLG, European Environment Agency, NOAA Office for Coastal Management (USA), the International Society of City and Regional Planners; as well as universities, think-tanks (NGOs and consultancy organizations which have expertise on this topic); and individual experts.

11. A wide consultation on the preparation of the study will be organized with ECE Divisions, including Environment, Sustainable Energy, Transport and Trade and Economic Cooperation.

12. The Working Party is invited to discuss, provide input and endorse this proposal.

Annex

UNECE member States by length of their sea coastlines and major cities in coastal areas[8]

No.	*Country*	*Coastlines in km*	*Major coastal cities*
1	Canada	202,080	Vancouver, Halifax, Moncton
2	Russian Federation	37,653	St. Petersburg, Vladivostok
3	Norway	25,148	Oslo, Bergen, Kragerø, Kristiansand
4	United States of America	19,924	Boston, NYC, New Orleans, Seattle
5	Greece	13,676	Thessaloniki, Patras, Heraklion
6	United Kingdom	12,429	London, Edinburgh, Plymouth
7	Italy	7,600	Venice, Naples, Palermo
8	Denmark	7,314	Copenhagen, Aarhus, Esbjerg
9	Croatia	5,835	Rijeka, Zadar, Dubrovnik
10	Iceland	4,970	Reykjavik, Hafnarfjörður
11	Spain	4,964	Barcelona, Bilbao, Vigo
12	France	4,853	Marseille, Nice, La Rochelle
13	Estonia	3,794	Tallinn, Parnu
14	Sweden	3,218	Malmo, Gothenburg, Stockholm
15	Germany	2,389	Bremerhaven, Cuxhaven, Stralsund
16	Portugal	1,793	Porto, Lisbon, Setubal
17	Ireland	1,448	Dublin, Galway, Waterford
18	Finland	1,250	Helsinki, Turku, Kotka
19	Cyprus	648	Larnaca, Limassol
20	Latvia	531	Riga, Liepāja
21	Netherlands	451	Rotterdam, Amsterdam, Hoorn
22	Poland	440	Gdansk, Gdynia, Kolobrzeg
23	Albania	362	Durres, Vlore
24	Israel	273*	Tel Aviv, Haifa
25	Montenegro	199	Budva, Herceg Novi, Bar
26	Malta	197	Valetta, St. Paul's bay, Marsakala
27	Lithuania	99	Klaipeda, Palanga, Nida
28	Belgium	66	Antwerp, Dunkirk, Ostend
29	Slovenia	47	Koper, Izola
30	Bosnia and Herzegovina	20	Neum
31	Monaco	4	Monaco
*Including Gaza Strip			

[8] Source: Developed by the UNECE secretarial based on the data in the CIA World Factbook and http://world.bymap.org/Coastlines.html